

# List of designations and abbreviations

$B_i$	(weighted) extended B-splines (WEB-splines)
$b_i$	inner B-splines
$b_j$	outer B-splines
$b_k$	relevant B-splines
$d$	dimension of B-Splines
dist	distance function
dist( $x$ )	distance of point $x$ from boundary $\Gamma$
$c_{i,j}$	coupling coefficients
$f$	perturbation function (right hand side of the differential equation)
FE	Finite Element
$h$	grid width, edge length
$I$	index set of the inner splines
$I(j)$	index set of the inner splines coupled to an outer spline
$i$	index of an inner spline
$J$	index set of the outer splines
$J(i)$	index set of the outer splines coupled to an inner spline
$j$	index of an outer spline
$k$	$d$ -dimensional grid index
$m$	order of convergence
$n$	degree of B-splines
$p_i$	$d$ -variate polynomial of degree $n$
$Q_k$	support of B-spline with index $k$
$s$	bound of the support portion in $\Omega$
$u$	solution of the differential equation
$v$	flow velocity
$w(x)$	weight function

WEB	weighted extended B-spline
$x_i$	weight point in the simulation region
$Z_k$	grid cells
$\delta$	parameter, the width of the strip in which the weight function rises
$\Gamma$	boundary of the simulation region
$\Omega$	simulation region
1	definition of the simulation region
2	input and storage of boundary conditions
3	establishment of control parameters
4	determination of a grid and cell classification
5	classification of the B-splines
6	determination of the coupling coefficients
7	determination of a weight function
8	determination of weight points and scaling factors
9	assembling of a system of equations
10	solution of the system of equations
11	computation of an approximate solution
12	output of the approximate solution
20	control points
21	grid
22	outer grid cells
23	grid cells on the boundary
24	inner grid cells
25	stream lines
30	computer means

